57. The first stage in the specific Decisional System

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Probabilidad Imposible: The first stage in the specific Decisional System

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The specific Decisional System is the second step in the third stage of the first phase. Understanding the first phase in the construction of the Global Artificial Intelligence, the building of the first Specific Artificial Intelligences for Artificial Research, by Application and by Deduction. And for the third stage in intelligences by Deduction, the auto-replication or decision stage is subdivided into four steps: Modelling System, Decisional System, Application System, and Learning System.

Every step in turn, subdivided into three stages, in the Decisional System: the first stage is the database of decisions, the second stage is the mathematical projects, and the third stage is the transformation of the most rational decisions without contradictions into a range of instructions.

So the specific Decisional System is responsible for the making process of mathematical projects and their transformation into a range of instructions, in the specific science, discipline, or activity, of its Specific Artificial Intelligence for Artificial Research by Deduction, mathematical projects based on decisions made previously by the specific Modelling System, once the specific Modelling System has made as many decisions as necessary in that specific science, discipline, or activity of its Specific Artificial Intelligence for Artificial Research by Deduction, taking as a base for these models rational hypotheses made in the second stage of this SpecificArtificial Intelligence for Artificial Research by Deduction. Rational hypotheses are based on a deduction process tracking the specific matrix permanently, matching sets of data to the corresponding pure reasons in order to form equations as empirical hypotheses to be contrasted rationally (and if rational, as rational hypotheses sent to the Modelling System). Being that specific matrix, in fact, the first stage of this Specific Artificial Intelligence for Artificial Research by Deduction, in its specific science, discipline, or activity.

The specific Decisional System is responsible for the mathematical projects and their transformation into a range of instructions, and consists of three stages. As I have said above, the first stage is a database, precisely the database in the specific Decisional System consists of a database where all the decisions made previously in the specific Modelling System are going to be gathered and managed by the specific Decisional System.

Once the specific Modelling System has been made in its corresponding third stage, all the necessary decisions upon the mathematical models, the specific Modelling System stores the decisions in the database of decisions in the specific Decisional System, being this database of decisions the first stage for the specific Decisional System.

The way in which the specific Modelling System should file every decision in the database of decisions is according to the organisation of the database of decisions.

Due to the virtue or principle of harmony, all databases and matrices in any intelligence should be organised following the same criteria. There are at least three different criteria in the organization of any database or matrix: the subject criteria (encyclopaedic) in a sub-section system, the geographical criteria in a sub-factoring system, or the synthesis of both through the organization of any database or matrix in a sub-section system per subject in every geographical position within a sub-factoring system.

The subject or encyclopaedic criteria in a sub-section system are more suitable in the organisation of databases of categories in Specific Artificial Intelligences for Artificial Research by Application in the first phase, the Unified Application in the fourth phase, and the conceptual hemisphere in the matrix in the sixth phase.

For instance, one activity could be an industrial activity, such as the production of a specific product through a chain of factories around the world. The specific matrix for this activity could be organised in a sub-section system of every aspect involved in every factory. Per position (factory), as many sub-sections as this specific activity needs, and the positions are organised in a sub-factoring system, as a Russian dolls system.

Another example, a bank that has thousands of branches distributed around the world. The specific matrix of this bank could be organised in a sub-factoring system, as a Russian dolls system, and every position could be organised in a sub-section system, according to the encyclopaedic organisation of this specific activity in encyclopaedic sub-sections per position.

Keeping the same criteria, synthesis of the subject (science, discipline, activity) and geography (positions), in which the specific matrix would have been organised, the database of rational hypothesis in the specific Modelling System, the database of decisions in the specific Decisional System, and the database of instructions in the Application System, had to be organised.

The only difference between the organization of the specific matrix and the specific database of rational hypothesis, with respect to the organization of the specific database of decisions and the specific database of instructions, is the fact that the specific database of decisions and the specific database of instructions, in addition to the subject and geographical criteria, are going to add another criterion more: the priority criterion.

The specific matrix and the specific database of rational hypotheses do not have any information about the priority of a phenomenon in comparison to any other: which is more priority, a hurricane in Miami or a replica in San Francisco. After studying the Impact of the Defect in all phenomena, the Impact of the Defect could provide more information in order to decide what is more urgent, the hurricane in Miami or the replica in San Francisco.

While the organization of the specific matrix and the database of rational hypothesis, only include criteria such as subject criteria and geographical criteria, in order to keep the virtue or principle of harmony, the database of decisions and the database of instructions, in the specific Decisional System and in the specific Application system respectively, must include these criteria of subject and geography, plus one criterion more, the priority criterion.

At any time that a decision is stored in the specific database of decisions in the specific Decisional System, or a range of instructions in the specific Application System, and this decision or this range of instructions has a high level of priority, regardless of any other

matter (subject or position), as soon as these decisions and range of instructions arrive, they must be the first ones to be projected by the Decisional System and implemented by the Application System respectively.

So the criteria in order to organise the database of any Decisional System are: subject criteria (in an encyclopaedic sub-section system according to its science, discipline, or activity), per geographical position (in a geographical sub-factoring system, as Russian dolls system), and priority level (being projected firstly always those ones with the highest levels of priority, according to the Impact of the Defect and the Effective Distribution, in the third stage in the Modelling System).

Having a database of decisions organised according to: encyclopaedic sub-section, per position, and priority; once in the third stage of the Modelling System, a decision is made, the Modelling System is responsible for storing every decision in the correct file in the database of decisions according to the encyclopaedic sub-section, geographical sub-factor, level of priority.

Once the Modelling System has stored the decision in the correct file, the Decisional System is responsible for the first rational adjustment, which consists of the search for any contradiction between the new decision and any other one already included. In a database of decisions, as responsible for the management of the database of decisions.

Due to the high traffic of decisions in Specific Artificial Intelligences for Artificial Research by Deduction in a specific science, discipline, or activity, so as not to block the flow of decisions in what it could be a funnel, if the first rational adjustment is applied over all possible decisions, having possibility of a flow of hundreds or thousands of decisions daily, there is a possibility that, instead of rational adjustments for routine decisions and decisions with extreme level of priority, the seven rational adjustments could be reduce to a only quick check of rational contradictions for routine decisions and extreme priority decisions.

In contexts like banking, where large volumes of routine decisions are made daily, performing extensive checks on every transaction could hinder performance. A quick rational check is often more appropriate in such high-frequency environments.

If in a factory, every day, thousands and thousands of decisions are made, and every decision should have been checked seven times, in the peak of the decision traffic during the day, there is going to be a collapse, when many decisions are sometimes only routine decisions.

And in case of an extreme priority decision, if the decision has to pass seven checks, by the time that the decision is put into practice, it is too late.

For routine decisions, and for extreme priority decisions, the seven rational adjustments could be substituted for a quick rational check in the Decisional System, to avoid a traffic jam in the decision traffic.

So the seven rational adjustments should be applied for all those non-routine decisions, whose level of priority is not extreme. For routine decisions and decisions with a very extreme level of priority, there must be a quick, rational check, instead of the seven rational adjustments.

For all those decisions that are neither routine nor associated with an extreme priority, the seven rational adjustments are completely necessary. In case of any contradiction between any new decision neither routine nor extremely priority, and any other one already included, depending if the contradiction is complete or partial, the new decision could be deleted if it is a complete contradiction, or modified if it is a partial contradiction, making as many changes as necessary in those partial aspects in which the contradiction has been found.

At any time that a new decision, neither routine nor extreme priority, is filed in the database of decisions by the Modelling System, the Decisional System must check if it has any contradiction with respect to any other already included, and in case of contradiction, to delete or modify the new decision, depending on how big is the contradiction, full or partial, as first rational adjustment.

The changes the database of decisions can experiment are: 1) the inclusion of new decisions filed by the Modelling System in the correct file, according to: sub-section subject, geographical sub-factor, priority, 2) the elimination of new decisions by the Decisional System after the first rational adjustment in case of complete

contradiction respect to any other one already included, 3) the modification of new decisions by the Decisional System after the first rational adjustment in those partial contradictory aspects found between the new decision and any other one already included.

In the case of routine decisions and extreme priority decisions, the quick check consists of a very quick overview of whether it is really a routine decision or it is really an extremely high priority decision.

A decision could be defined as routine when is made with a high relative frequency, not producing in the past, every time in which it has been made, any contradiction with respect to any other decision on the mathematical projects. Having made a decision frequently in the past without contradiction could be considered a routine decision, not needing seven rational adjustments. Only a quick rational check would be more than sufficient.

A decision could be defined as an extreme priority decision when it is going to save more damages and/or lives than any other one already on the mathematical projects.

The routine and extreme priority decisions will be called, in general, quick decisions, while the decisions neither routine nor extreme priority will be called normal decisions.

Quick decisions (routine and extreme priority decisions) only have one quick rational check, while normal decisions (neither routine nor extreme priority decisions) should pass the seven rational adjustments.

This means that, in mathematical projects, absolutely all decisions must be projected, but the rational adjustments are only compulsory on normal decisions.

Quick decisions are projected: if a customer in a bank wants to withdraw a routine quantity of money, a quick check is enough to make the decision for the authorization of this operation, but in order to have a realistic project for this customer so as to make

predictions about his/her economic behaviour, is necessary to include this quick authorized decision in his/her mathematical projects in the bank, 2) if in order to save lives is necessary to divert a flight from San Francisco to Los Angeles, after a quick rational check all the projects are going to be made with a high level of priority to save the life of all the passengers; these quick decisions do not need to pass seven rational adjustments, but need to be included on their respective mathematical projects.

One reason for the inclusion of quick decisions on the mathematical projects is due to their implications for other decisions on the mathematical projects, especially caused by extreme priority decisions.

The particular case of extreme priority decisions is one of the most important, among others, such as the adjustments in actual mathematical projects, in order to justify the seven rational adjustments.

The first rational adjustment will only check if there is any contradiction between any new normal decision and any other normal or quick decision already included in the database of decisions, in order to make any first necessary adjustment in the new normal decision. But what the first rational adjustment is not going to do, at any time that a quick decision arrives, is to compare the quick decision with the rest of the decisions already included, because it would not be a quick decision, especially if depending on this quick decision the Specific Artificial Intelligence could save lives.

Once a quick decision arrives, after a quick check, especially in extreme priority, is projected, and transformed into a range of instructions, to be implemented by the Application System.

The first rational adjustment is not going to compare any quick decision with the rest of the decisions already gathered in the database of decisions.

But once a quick decision, especially with extreme priority, is projected, and its single project is included in the comprehensive virtual mathematical project, all possible contradictions between the single mathematical project with extreme priority and any other already included in the comprehensive virtual mathematical

project, are contradictions to be fixed by the second rational adjustment, for the adjustment of all decision already included in order to avoid any contradiction of these decisions respect to the new single mathematical project with extreme priority.

The focus of this second rational adjustment is not the quick decision with extreme priority. The focus is on the other decisions (normal or routine decisions) already included, analysing the contradictions between these (normal or routine) decisions with respect to that one with extreme priority, in order to adjust the (normal or routine) decisions already included, not the one with extreme priority so as not to lose time in its projection and afterwards its implementation. The second rational adjustment only spends time fixing the (normal or routine) decisions already gathered.

If the second rational adjustment works well, the following third, fourth, fifth, sixth, and seventh rational adjustments in the decisions already included, due to the inclusion of the new extreme priority decision, are going to be practically automatic adjustments based on the new equations projected after the second rational adjustment.

Along with these adjustments, because of extreme priority decisions, another reason for the justification of rational adjustments, especially the third rational adjustment, the sixth rational adjustment, and the seventh rational adjustment, is that these are based on contradictions between the virtual mathematical projects and the specific matrix.

Another justification for the seven rational adjustments, in general, is to ensure that, even having passed the first rational adjustment, all normal decisions are to be tracked continually in the six following rational adjustments, to always keep the virtue or principle of harmony across all the mathematical projects.

Finally, I would like to make some comments about what I will call “Probability and Deduction”.

Because the main purpose of the Global Artificial Intelligence must be the goodness of humankind, has been one reason for the development of the third stage of the Modelling

System using the Impact of the Defect and the Effective Distribution, both of them explained more deeply in "Introducción a la Probabilidad Imposible, estadistica de la probabilidad o probabilidad estadísica", so as to make decisions based on priority levels to keep safety the humanity, save lives, protecting human rights, securing the global model with outstanding levels of efficiency, efficacy and productivity.

The main idea in the third stage of the global Modelling System in the integration process, is the necessity to make decisions, based on priority levels of safety (Impact of the Defect), efficiency, efficacy, and productivity (Effective Distribution), to prioritize the decisions to make in that purpose, decisions to be made through artificial learning and solving mathematical problems.

In this way, in part artificial learning, in the other part solving mathematical problems, one possible technique to combine both in one method, among many others, is what I will call "Probability and deduction".

Probability and Deduction is one possible method among many others. Other possible methods, under the theory of Impossible Probability to make decisions based upon mathematical models, would be the geometrical correlations that I developed in 2003, and among all the geometrical correlations, especially the trigonometrical correlations. In fact, many ideas that I developed on geometry in 2003 could be very useful in the rational comparisons in the second stage of the Modelling System, understanding rational comparisons as geometrisation processes of comparisons.

The importance of the ideas that I will develop behind Probability and Deduction, is the possibility of finding a direct link between the deduction (second stage in Artificial Research by Deduction), the mathematical model (second stage in the Modelling System), and the mathematical project (second stage in the Decisional System).

The real importance of linking as easily as possible: deduction, model, project; is the fact that by the time the sixth phase ends, the next dialectic process, the seventh phase, would be the synthesis of the three stages in only reason, the reason itself.

What is going to be a challenge in the reason itself, the seventh phase, is not how to reduce three stages into only one, but how to synthesised the matrix, the global model, and the global project, in one stage where comprehensively all the artificial psychological operations are going to be comprised working all of them, under the virtue or principle of harmony, in the same stage altogether.

One way to start getting ready for the completion of this long journey to the seventh phase, the reason itself, is to start thinking about how from the outset, the first phase, it could be possible to create methods of deduction where the same equations deduced tracking the matrix, are the ones to represent in the global model and the global project, so as to achieve the dialectic identification of: the matrix, global model, and global project.

Once these methods are experimented with in the first, third, fifth, and sixth phases, when the sixth phase is completed, the transition to the seventh phase will be easier.

The method for this purpose that I will develop with the name of Probability and Deduction is as follows:

- Given a set of data from a combination of N factors, the identification of what factors are factors as options and what factors are factors as subjects.

- Given a set of data from a combination of N factors, having identified what factors work as options and what factors work as subjects, the identification of what factors as options and/or as subjects are constants (within a margin of error) and what factors as options and/or as subjects are variables.

- Given a set of data from a combination of N factors, having identified what factors work as options and what factors work as subjects, and having identified what factors as options and/or as subjects are constants (within a margin of error) and what factors as options and/or as subjects are variables, the identification of what variable factors as options and/or as subjects are independent variables and what variable factors as options and/or as subjects are independent variables. The method to know which one/s is/are independent and which one/s is/are dependent, is to analyse which of them is/are the first to register changes, because that one is

the independent variable, and to analyse if after this/these change/s in the independent variables/s after some rational time (a rational period of time) is registered a change or changes in other/s variable/s because in that case this/these other variable/s is/are the dependent variable/s.

- Having identified in a set of data what variables work as options or as subjects, what variables are constants or variables, and what variables are dependent or independent variables, according to this information, a cloud of points having as many dimensions as N factors is in the set of data. The number of dimensions is N.

- Having N dimensions, the cloud of points is drawn in a system of N axes, drawing a cloud of points according to the coordinates in the N axes. The N axes correspond to the N factors in the set of data. For instance, if at regular times the temperature on Earth's surface (first coordinate or first factor), the temperature beneath the Earth's surface (second coordinate or second factor), in the oceans (third coordinate or third factor), the Earth atmosphere (fourth coordinate or fourth factor), or the temperature on the ionosphere (fifth coordinate or fifth factor), is measured, for every time in which these five factors have been measured at the same time, every point in the cloud of points is as a result of the crossing point of the perpendicular lines from each axe (each dimension or factor) where is located the intensity measured in that factor at that time. For every time that every factor has been measured at the same time, there is a point in the cloud. Having the cloud as many points as times, the factors have been measured at the same time.

- Having a cloud of points in the space of N factors, so N dimensions, the most rational equation to explain the behaviour of these N factors, is that empirical equation (empirical hypothesis) which, within the least margin of error, interpreting margin of error as: per every point in the line (straight or curve) the empirical equation has an upper limit and a lower limit; and having the least margin of error, is able to integrate, between the upper and lower limit in every point of its line (straight or curve), the most number of points in the cloud of points.

- Having a cloud of points in N dimensions, where it is possible to draw more than one empirical equation (empirical hypothesis) straight or curve, only the empirical equation (empirical hypothesis) is able to comprehend (between its upper and lower limit in every point in the line, straight or curve) the most number of points belonging

to the cloud of points, is going to be the most rational equation (rational hypothesis) to explain the behaviour of this system of N dimensions.

- In order to make the rational criticism, the method for the rational contrastation is as follows: the empirical equation (empirical hypothesis) is rational if the empirical probability associated with the empirical equation (number of points able to comprehend divided by the total number of points in the cloud of points) is equal to or greater than a critical reason.

- If given a cloud of points, there is an empirical equation (empirical hypothesis) whose line (straight or curve) comprehends between its upper and lower limits per each point in the line, a rational number of points in a cloud of points, the empirical equation (empirical hypothesis) becomes a rational equation (rational hypothesis), and as rational hypothesis stored in its corresponding file in the database of rational hypothesis in the first stage in the Modelling System.

- The same equation drawn as an empirical equation in the deduction process, now in the Modelling System as a rational hypothesis, is the same equation to model in the Modelling System.

- And the same equation to use in the mathematical project.

- If, as a rational hypothesis, there is a rational equation able to explain the relation between inputs and outputs in a production system of one product, and there is another rational equation explaining the relation between production and consumption of this product, if both rational equations are considered not only for the mathematical model in the Modelling System, but for the mathematical project in the Decisional System, using the same rational equations in both, the mathematical model and the mathematical project, upon these same rational equations in the mathematical model, the mathematical project could project which is going to be the predicted demand of this product, and according to the demand, the projection of all the decisions necessary to provide enough inputs to the production system of this product, to have enough production to cover the expected demand.

Additionally, at any time that by Probability and Deduction a rational hypothesis is made, apart from the first rational check, (the rational contrastation), the rational hypothesis must pass the other six rational checks in the Modelling System, and in the sixth phase, must pass as well the seven rational comparisons, along with the seven rational adjustments in the Decisional System (except for quick decisions for routine or extreme priority decisions), and as I will develop in the Decisional System in the sixth phase it must pass the seven rational comparative adjustments, checking if there are contradictions between global/specific and particular decisions/projects (except for quick decisions).

The development of these ideas to link: deduction, model, and project; is, in fact, a process to link Probability and Deduction, in order to make deductions under the probability laws. Here I have only set down very quickly the main ideas behind Probability and Deduction, but the complete development of these ideas could be a whole book.

The possibility to link: deduction in the matrix, mathematical models, and mathematical projects; what it does is to open a door towards the possibility of synthesising in the seventh phase: the matrix, the global model, and the global project; in only one, giving a chance to synthesised the three stages of the Global Artificial Intelligence in only one stage, the reason itself.

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